Paper No. 34

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Ex parte RANDALL B. METCALF

Appeal No. 2002-2049
Application No. 08/749,766

HEARD: Apr. 2, 2003

Before RUGGIERO, BARRY, and LEVY, *Administrative Patent Judges*.
BARRY, *Administrative Patent Judge*.

DECISION ON APPEAL

A patent examiner rejected claims 1, 2, 4-10, 12-15, 17-19, and 21-55. The appellant appeals therefrom under 35 U.S.C. § 134(a). We reverse.

BACKGROUND

The invention at issue on appeal records and reproduces sounds produced concurrently by different sources. (Spec at 1.) Systems for recording and reproducing such sounds are known. In the musical context, for example, such systems record and reproduce live performances of bands and orchestras. In these cases, musical instruments and singers' voices constitute the sources of sound. (*Id.*)

The appellant asserts that problems are encountered when trying to reproduce sound by use of loudspeakers, especially when the sound is produced by more than one source. (Appeal Br. at 2.) One such problem is associated with the phenomenon of "sound staging." Sound staging enables a listener to perceive the apparent size and location of a musical presentation. A sound stage includes the physical properties of depth and width. These properties contribute to the ability to listen to an orchestra, for example, and discern the relative positions of its instruments. (Spec. at 3.)

According to the appellant, many recording systems fail to capture precisely the sound staging effect when recording more than one source of sound. (*Id.*) One reason for this, he adds, is the methodology used by the systems. More specifically, such systems use one or more microphones to receive sound waves produced by a plurality of sources (e.g., drums, guitar, vocals) and convert the sound waves to electrical audio signals. When a single microphone is used, the sound waves from each source are mixed (i.e., superimposed on one another) to form a composite signal. When plural microphones are used, the audio signals from each are likewise mixed to form a composite signal. The appellant explains that such mixing limits the ability to recreate the sound staging of the sources. He adds, "[t]his is one reason why an orchestra sounds different when listened to live as compared with a recording." (*Id.* at 4.)

Another problem identified by the appellant occurs when a mixed audio signal is sent to a loudspeaker. More specifically, a phenomenon known as "masking" precludes the precise recreation of original sounds when they are mixed. (Appeal Br. at 3.) Masking can render one sound inaudible when accompanied by a louder sound. (Spec. at 5.) Loudspeaker masking occurs when a loudspeaker cone is driven by a composite signal as opposed to an audio signal corresponding to a single sound source. (*Id.* at 6.)

For its part, the appellant's invention features detectors for receiving sound waves from plural sources of sound and converting each of the received waves into separate audio signals without mixing. A recording mechanism separately records each of the audio signals on a recording medium. Subsequently, the stored signals are separately retrieved and provided over separate signal paths to individual amplifiers and separate loudspeakers. (*Id.* at 9.) In summary, the audio signals are not mixed when received from the sources or when stored for recording. According to the appellant, his "invention avoids problems . . . encountered when audio signals are mixed." (Appeal Br. at 7.)

A further understanding of the invention can be achieved by reading the following claim.

1. A sound system for capturing and reproducing sounds produced by a plurality of sound sources, comprising:

means for separately receiving sounds produced by the plurality of sound sources;

means for converting the separately received sounds to a plurality of separate audio signals without mixing the audio signals;

means for separately storing the plurality of separate audio signals without mixing the audio signals;

means for separately retrieving the stored audio signals;

an amplification network comprising a plurality of amplifier means, with separate amplifier means for separately amplifying each of the separate audio signals;

a loudspeaker network comprising a plurality of loudspeaker means, with separate loudspeaker means for reproducing the separately amplified audio signals; and

a dynamic control means for individually controlling the relative amplitude of the separate audio signals for a given power level based on predetermined criteria.

Claims 1, 2, 4-10, 12-15, 17-19, and 21-55 stand rejected under 35 U.S.C. § 103(a) as obvious over U.S. Patent No. 3,710,034 ("Murry") and U.S. Patent No. 5,315,060 ("Paroutaud").

OPINION

Rather than reiterate the positions of the examiner or the appellant *in toto*, we address a point of contention therebetween. The examiner admits, "Murry does not disclose that the receiving sound are produced by the plurality of sound sources, an amplification network comprising a plurality of amplifier means, with separate amplifier means for separately amplifying each of the separate audio signals, and a dynamic control means for individually controlling the relative amplitude of the separate audio signals for a given power level based on predetermined criteria." (Final Rejection[1] at 2.) He concludes, however, "it would have been obvious to combine Paroutaud's teaching with Murray [sic] because in a reproduction of music, each microphones [sic] could detect the sound of each instrument in the musical instrument and record each instrument onto a separate channel. Also, volume of each signal could be controlled and amplified separately to drive each instrument transducers [sic]." (*Id.* at 3.) The appellant argues that the examiner "has provided no teaching for such a combination, let alone any objective motivation." (Reply Br. at 3.)

"Obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching, suggestion or incentive

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[1]We advise the examiner to copy his rejections into his examiner's answers rather than merely referring to a "rejection . . . set forth in prior Office action. . . ." (Examiner's Answer at 3.)

supporting the combination." *Carella v. Starlight Archery and Pro Line Co.*, 804 F.2d 135, 140, 231 USPQ 644, 647 (Fed. Cir. 1986) (citing *ACS Hosp. Syss., Inc. v. Montefiore Hosp.*, 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984)). "[T]he factual inquiry whether to combine references must be thorough and searching." *McGinley v. Franklin Sports, Inc.*, 262 F.3d 1339, 1351-52, 60 USPQ2d 1001, 1008 (Fed. Cir. 2001). This factual question cannot "be resolved on subjective belief and unknown authority," *In re Lee*, 277 F.3d 1338, 1343-44, 61 USPQ2d 1430, 1434 (Fed. Cir. 2002); "[i]t must be based on objective evidence of record." *Id.* at 1343, 61 USPQ2d at 1434.

Here, the examiner proposes to combine teachings of Paroutaud with those of Murry "because in a reproduction of music, each microphones [sic] **could** detect the sound of each instrument in the musical instrument and record each instrument onto a separate channel. Also, volume of each signal **could** be controlled and amplified separately to drive each instrument transducers [sic]." (Final Rejection at 3 (emphasis added).) The U.S. Court of Appeals for the Federal Circuit has stated that "[t]he mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested the desirability of the modification." *In re Fritch*, 972 F.2d 1260, 1266, 23 USPQ2d 1780, 1784 (Fed. Cir. 1992) (citing *In re Gordon*, 733 F.2d 900, 902, 221 USPQ 1125, 1127 (Fed. Cir. 1984)).

Although this statement is couched in terms of modifying the prior art, we hold that a similar one applies to combining teachings found in the prior art. Specifically, the mere fact that teachings found in the prior art could be combined as proposed by an examiner does not make the combination obvious "absent some teaching, suggestion or incentive supporting the combination." *Carella*, 804 F.2d at 140, 231 USPQ at 647 (citing *ACS Hosp. Syss., Inc.*, 732 F.2d at 1577, 221 USPQ at 933). In the instant appeal, the examiner fails to identify any such teaching, suggestion, or incentive to support his proposed combination. Therefore, we reverse the rejection of claims 1, 2, 4-10, 12-15, 17-19, and 21-55 as obvious over the combination of Murry and Paroutaud.

CONCLUSION

In summary, the rejection of claims 1, 2, 4-10, 12-15, 17-19, and 21-55 under § 103(a) is reversed.

REVERSED

JOSEPH F. RUGGIERO
Administrative Patent Judge

LANCE LEONARD BARRY
Administrative Patent Judge

STUART S. LEVY
Administrative Patent Judge

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